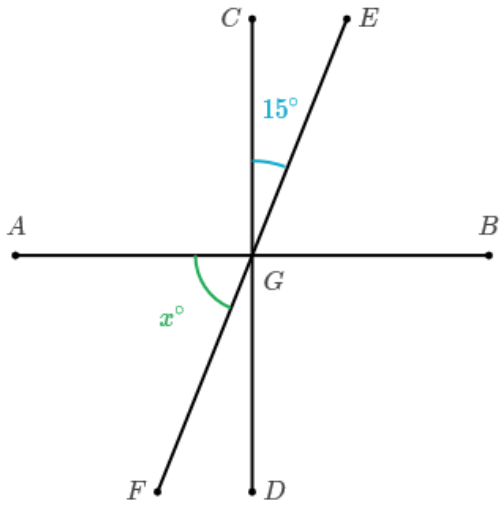
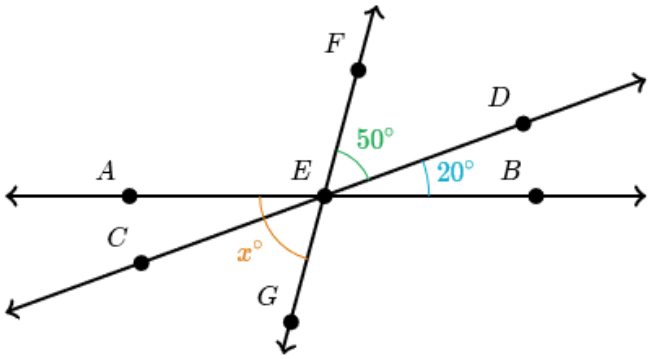
Math 4. Classwork 11.

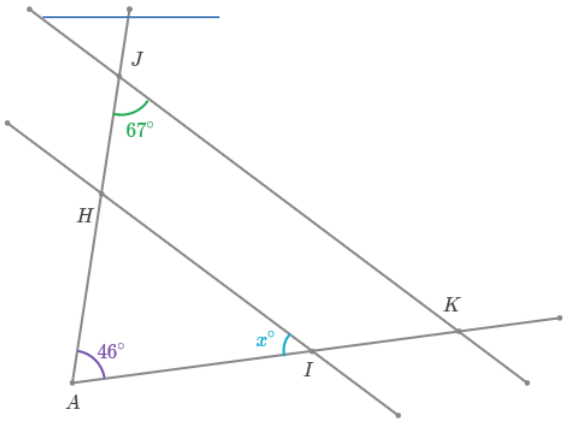
Geometry

Given that $\overline{AB} \perp \overline{CD}$

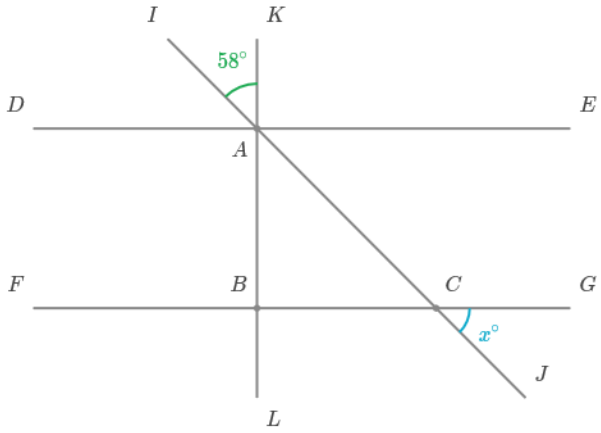




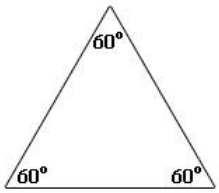
$\overline{HI} \parallel \overline{JK}$



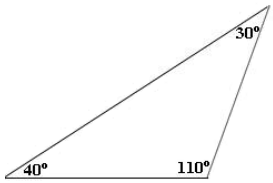
$\overline{DE} \parallel \overline{FG}$ and $\overline{KL} \perp \overline{FG}$.



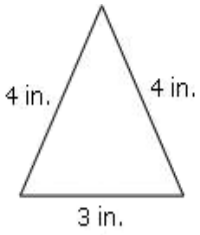
Triangles:



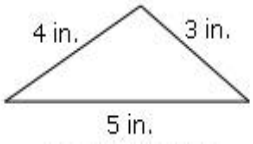
Acute triangle has all acute angles, not only 60˚



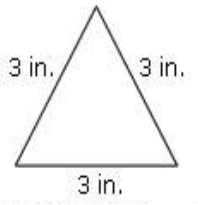
Obtuse triangle has an obtuse angle.



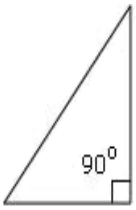
Isosceles triangle has two equal sides



Scalene triangle that has three unequal sides

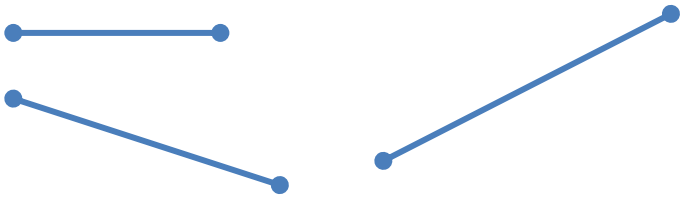


Equilateral triangle has three equal sides



Right triangle has a right angle.

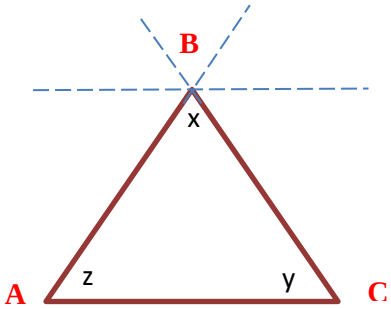
How to construct a triangle with sides equal to three line segments:



Triangle properties:

Sum of interior angles of any triangle (***(∀ Δ)*** is 180°.
∠ x+∠y +∠z = 180°

Proof:

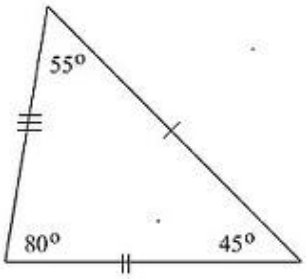


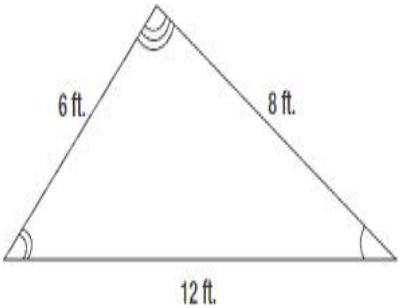
In any triangle ***(∀ Δ)*** the sum of 2 sides is always grater then the third.
(∀ Δ ABC, AB+BC > AC)

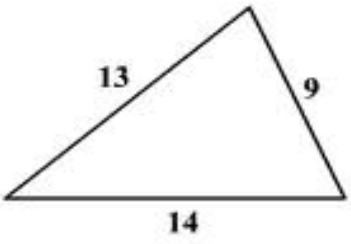
In **any triangle**,

- the **largest** interior **angle** is **opposite** the **largest side**.
- the **smallest** interior **angle** is **opposite** the **smallest side**
- the middle-sized interior angle is **opposite** the middle-sized side

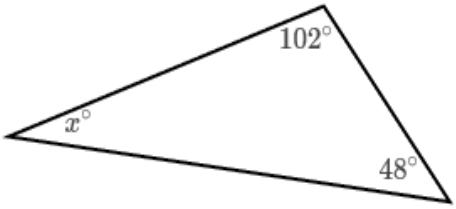
For the given triangles make the correct fit of angles and sides.

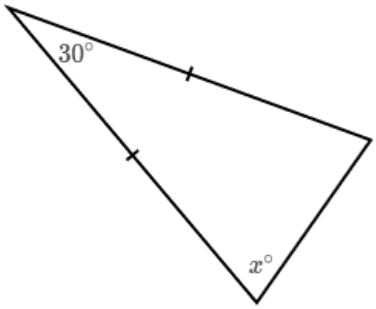






a) 15cm, 10cm, 8cm b) 44°,70°, ? c) 35°, 65°, ?





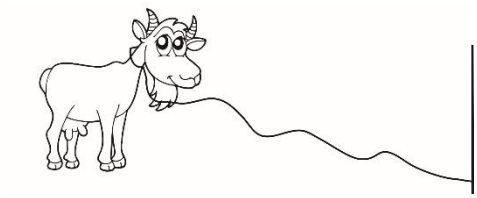
- Jane and Mary are planting flowers. Jane can plant all flowers in 2 hours, Mary can do it in 3 hours. How many hours they need to plant all flowers together?

- Jane and Mary are doing fall clean up in a backyard. Mary can do the job in 6 hours; together they can do it in 4 hours. How many hours does Jane need to clean up the backyard?

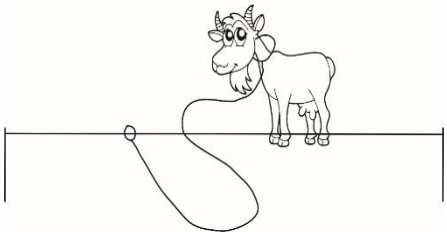
- 5 hamsters will eat 5 bags of hamster food in 5 days. How many days 10 hamsters need to eat 10 bags of food?

the set of all points on a plane that are a fixed distance from a center.

- A goat is tied to a stake with a rope of length (L). What shape it will graze?



- A goat is tied to 2 poles with a rope of length (L). What shape it will graze?



Homework 9 review

(c) $\frac{5(39-a)+b(39-a)}{5+b} = \frac{(5+b)(39-a)}{5+b}$

(d) $\frac{a-ab}{1-b} = \frac{a(1-b)}{1-b}$

***Peter got a new book. On day 1 he read $\frac{1}{3}$ of the whole book and on day 2 he read $\frac{1}{3}$ of the rest of the book. On day 3, Peter once again read $\frac{1}{3}$ of the rest of the book and now he needs to read 80 more pages to finish the book. How many pages are there in the book?

Start from the end of the story and work backwards:

On day 3 Peter read $\frac{1}{3}$ of the remaining pages and after that 80 pages were left to read. That means that 80 is $\frac{2}{3}$ of those remaining pages. So, the number of pages Peter read on the third day is 40, which is $\frac{1}{3}$. This makes the total number of pages that Peter had to read after day 2 ended or at the beginning of day 3 80+40=120 or 80:2x3=120

Next, 120 is what Peter started with on day 3 right? It is also the number of remaining pages that Peter had to read after day 2 ended. So Peter read $\frac{1}{3}$ of the remaining pages during day 2 and had 120 pages remaining. That means that 120 is $\frac{2}{3}$ of the remaining pages. So, the number of pages Peter read on the day 2 is 60, which is $\frac{1}{3}$. This makes the total number of pages that Peter had to read after day 1 or at the beginning of day 2 120+60=180 or 120:2x3=180

Next, 180 is what Peter started with on day 2. It is also the number of pages that Peter still had to read after day 1 ended. Same as before: 180 is $\frac{2}{3}$ of the remaining pages after Peter read $\frac{1}{3}$ of the book on day 1. If 180 is $\frac{2}{3}$ of the book, then the whole book is 180 + 90=270 pages or 180:2 x3=270